

ABSTRACT

A modified cycloolefin copolymer is obtained by chemical modification of a base polymer being a cycloolefin copolymer with ethylene chains, through addition of a modifier compound
5 having a functional group and a hydrogen-donating group or having a functional group and an alkyl halide group, wherein:

the functional group is added at a stoichiometric percentage of 20 to 90% of all the replaceable hydrogen atoms in ethylene chains and main-chain cycloolefin chains of the
10 base polymer; and

the distribution degree of the functional group-modified cycloolefin copolymer in the base polymer is in the range of 0.01 to 0.1 as expressed in distribution correlation coefficient (DR) defined by the relation (1) below.
15 Also provided are a process of production and uses of the modified cycloolefin copolymers.

$$(DR) = [(RI) - (UV)]^2 \dots (1)$$

wherein (RI) and (UV) are dispersion indexes of molecular weight distributions (= weight-average molecular
20 weight/number-average molecular weight) determined by simultaneous detection based on change of refractive index (RI) and detection based on a UV absorption spectrum characteristic of the functional groups added.